

**WHAT IS CLAIMED IS:**

1. A feedback process for providing feedback for unrecognized speech comprising:  
a speech input process for receiving a speech command as spoken by a user;  
and  
an unrecognized speech comparison process, responsive to said speech input process, for comparing said user's speech command to a plurality of recognized speech commands available in a speech library to determine if said user's speech command is unrecognized speech, as opposed to non-speech.
2. The feedback process of claim 1 further comprising an unrecognized speech response process, responsive to said unrecognized speech comparison process determining that said user's speech command is unrecognized speech, for generating a generic response which is provided to said user.
3. The feedback process of claim 2 wherein said generic response is a visual response.
4. The feedback process of claim 2 wherein said generic response is an audible response.
5. The feedback process of claim 1 wherein said unrecognized speech comparison process includes a user speech modeling process for performing an acoustical analysis of said user's speech command and generating a user speech acoustical model for said user's speech command.
6. The feedback process of claim 5 wherein said unrecognized speech comparison process further includes a recognized speech modeling process for performing an acoustical analysis of each of said plurality of recognized speech commands and generating a recognized speech acoustical model for each said recognized speech command, thus generating a plurality of recognized speech acoustical models.

1 7. The feedback process of claim 6 wherein said unrecognized speech comparison  
2 process further includes an acoustical model comparison process for comparing said user  
3 speech acoustical model to each of said recognized speech acoustical models, thus defining a  
4 plurality of acoustical scores which relate to said user's speech command, one said score for  
5 each said comparison performed.

1 8. The feedback process of claim 7 wherein said unrecognized speech comparison  
2 process further includes an unrecognized speech window process for defining an acceptable  
3 range of acoustical scores indicative of unrecognized speech, wherein said user's speech  
4 command is defined as unrecognized speech if the acoustical score, chosen from said  
5 plurality of acoustical scores, which indicates the highest level of acoustical match falls  
6 within said acceptable range of acoustical scores.

1 9. The feedback process of claim 7 wherein said plurality of recognized speech  
2 commands includes an unrecognized speech entry, said recognized speech modeling process  
3 further performs an acoustical analysis on said unrecognized speech entry to generate an  
4 unrecognized speech acoustical model for said unrecognized speech entry, and said  
5 acoustical model comparison process further compares said user speech acoustical model to  
6 said unrecognized speech acoustical model to define an unrecognized speech acoustical  
7 score; wherein said user's speech command is defined as unrecognized speech if said  
8 unrecognized speech acoustical score indicates a higher level of acoustical match than any of  
9 said plurality of acoustical scores.

1 10. A feedback process for providing feedback for unrecognized speech comprising:  
2 a speech input process for receiving a speech command as spoken by a user;  
3 an unrecognized speech comparison process, responsive to said speech input  
4 process, for comparing said user's speech command to a plurality of recognized  
5 speech commands available in a speech library to determine if said user's speech  
6 command is unrecognized speech, as opposed to non-speech; and  
7 an unrecognized speech response process, responsive to said unrecognized  
8 speech comparison process determining that said user's speech command is  
9 unrecognized speech, for generating a generic response which is provided to said  
10 user.

1 11. The feedback process of claim 10 wherein said generic response is a visual response.

1 12. The feedback process of claim 10 wherein said generic response is an audible  
2 response.

1 13. A feedback process for providing feedback for unrecognized speech comprising:  
2 a speech input process for receiving a speech command as spoken by a user;  
3 and  
4 an unrecognized speech comparison process, responsive to said speech input  
5 process, for comparing said user's speech command to a plurality of recognized  
6 speech commands available in a speech library to determine if said user's speech  
7 command is unrecognized speech, as opposed to non-speech;  
8 wherein said unrecognized speech comparison process includes a user speech  
9 modeling process for performing an acoustical analysis of said user's speech  
10 command and generating a user speech acoustical model for said user's speech  
11 command;  
12 wherein said unrecognized speech comparison process further includes a  
13 recognized speech modeling process for performing an acoustical analysis of each of  
14 said plurality of recognized speech commands and generating a recognized speech  
15 acoustical model for each said recognized speech command, thus generating a  
16 plurality of recognized speech acoustical models.

1 14. The feedback process of claim 13 wherein said unrecognized speech comparison  
2 process further includes an acoustical model comparison process for comparing said user  
3 speech acoustical model to each of said recognized speech acoustical models, thus defining a  
4 plurality of acoustical scores which relate to said user's speech command, one said score for  
5 each said comparison performed.

1 15. The feedback process of claim 14 wherein said unrecognized speech comparison  
2 process further includes an unrecognized speech window process for defining an acceptable  
3 range of acoustical scores indicative of unrecognized speech, wherein said user's speech  
4 command is defined as unrecognized speech if the acoustical score, chosen from said  
5 plurality of acoustical scores, which indicates the highest level of acoustical match falls  
6 within said acceptable range of acoustical scores.

1     16.     The feedback process of claim 14 wherein said plurality of recognized speech  
2     commands includes an unrecognized speech entry, said recognized speech modeling process  
3     further performs an acoustical analysis on said unrecognized speech entry to generate an  
4     unrecognized speech acoustical model for said unrecognized speech entry, and said  
5     acoustical model comparison process further compares said user speech acoustical model to  
6     said unrecognized speech acoustical model to define an unrecognized speech acoustical  
7     score; wherein said user's speech command is defined as unrecognized speech if said  
8     unrecognized speech acoustical score indicates a higher level of acoustical match than any of  
9     said plurality of acoustical scores.

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1 17. A feedback method for providing feedback for unrecognized speech comprising:  
2 receiving a speech command as spoken by a user; and  
3 comparing the user's speech command to a plurality of recognized speech  
4 commands available in a speech library to determine if the user's speech command is  
5 unrecognized speech, as opposed to non-speech.

1 18. The feedback method of claim 17 further comprising generating a generic response  
2 and providing it to the user if it is determined that the user's speech command is  
3 unrecognized speech.

1 19. The feedback method of claim 17 wherein said comparing the user's speech  
2 command includes performing an acoustical analysis of the user's speech command and  
3 generating a user speech acoustical model for the user's speech command.

1 20. The feedback method of claim 19 wherein said comparing the user's speech  
2 command further includes performing an acoustical analysis of each of the plurality of  
3 recognized speech commands and generating a recognized speech acoustical model for each  
4 recognized speech command, thus generating a plurality of recognized speech acoustical  
5 models.

1 21. The feedback method of claim 20 wherein said comparing the user's speech  
2 command further includes comparing the user speech acoustical model to each of the  
3 recognized speech acoustical models, thus defining a plurality of acoustical scores which  
4 relate to the user's speech command, one score for each comparison performed.

1 22. The feedback method of claim 21 wherein said comparing the user's speech  
2 command further includes defining an acceptable range of acoustical scores indicative of  
3 unrecognizable speech, wherein the user's speech command is defined as unrecognized

4 speech if the acoustical score, chosen from the plurality of acoustical scores, which indicates  
5 the highest level of acoustical match falls within the acceptable range of acoustical scores.

1 23. The feedback method of claim 21 wherein the plurality of recognized speech  
2 commands includes an unrecognized speech entry, wherein said comparing the user's speech  
3 command further includes:

4 performing an acoustical analysis on the unrecognized speech entry to generate an  
5 unrecognized speech acoustical model; and

6 comparing the user speech acoustical model to the unrecognized speech acoustical  
7 model to define an unrecognized speech acoustical score;

8 wherein the user's speech command is defined as unrecognized speech if the  
9 unrecognized speech acoustical score indicates a higher level of acoustical match than any of  
10 the plurality of acoustical scores.

1 24. A computer program product residing on a computer readable medium having a  
2 plurality of instructions stored thereon which, when executed by the processor, cause that  
3 processor to:

4 receive a speech command as spoken by a user;

5 compare the user's speech command to a plurality of recognized speech  
6 commands available in a speech library to determine if the user's speech command is  
7 unrecognized speech, as opposed to non-speech; and

8 generate a generic response and provide it to the user if it is determined that  
9 the user's speech command is unrecognized speech.

1 25. The computer program product of claim 24 wherein said computer readable medium  
2 is a random access memory (RAM).

1 26. The computer program product of claim 24 wherein said computer readable medium  
2 is a read only memory (ROM).

1 27. The computer program product of claim 24 wherein said computer readable medium  
2 is a hard disk drive.



1 28. A processor and memory configured to:

2 receive a speech command as spoken by a user;

3 compare the user's speech command to a plurality of recognized speech  
4 commands available in a speech library to determine if the user's speech command is  
5 unrecognized speech, as opposed to non-speech; and

6 generate a generic response and provide it to the user if it is determined that  
7 the user's speech command is unrecognized speech.

1 29. The processor and memory of claim 28 wherein said processor and memory are  
2 incorporated into a wireless communication device.

1 30. The processor and memory of claim 28 wherein said processor and memory are  
2 incorporated into a cellular phone.

1 31. The processor and memory of claim 28 wherein said processor and memory are  
2 incorporated into a personal digital assistant.

1 32. The processor and memory of claim 28 wherein said processor and memory are  
2 incorporated into a palmtop computer.

1 33. The processor and memory of claim 28 wherein said processor and memory are  
2 incorporated into a child's toy.